

Two new species of the genus *Bifurcia* (Araneae: Linyphiidae) from China

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Abstract — Two new species of the genus *Bifurcia* (Araneae: Linyphiidae), *B. cucurbita* sp. nov. and *B. songi* sp. nov., are diagnosed, described and illustrated on the basis of the specimens collected from Henan Province of China.

Key words — Linyphiidae, Micronetinae, new species

Introduction

Recently the genus *Arcuphantes* Chamberling & Ivie, 1943 was considered to be not a monophyletic group, and *Fusciphantes* Oi, 1960 was not its junior synonym (Saaristo *et al.*, 2006). Furthermore the two Chinese species *A. ramosus* and *A. curvatus* once placed in *Arcuphantes* (Li *et al.*, 1987; Li & Song, 1993) belong to neither of these two genera. Saaristo *et al.* (2006) established a new genus *Bifurcia* for these Chinese species on the basis of the above reasons.

Thus these species have been reported in the catalog of Platnick (2007) as *Bifurcia ramosa* (Li & Zhu, 1987) and *B. curvata* (Li & Zhu, 1987). The former species was found from Hubei, Hunan and Henan Provinces, and the latter from Hebei and Sichuan Provinces. In the present paper, further two new species belonging to *Bifurcia* are described under the names of *B. cucurbita* sp. nov. and *B. songi* sp. nov.

Materials and Methods

Specimens were studied under a XTL-II compound microscope equipped with an Abbe drawing device. Type specimens are deposited in the Museum of Hebei University (MHBHU). All measurements are given in mm. Scale=0.1 mm.

Leg measurements are shown as: total length (femur + patella + tibia + metatarsus + tarsus). The chaetotaxy is given in the following formula: Ti: 2-1-1-1. This stands for: tibia I has two dorsal, one retro-, one pro- and one ventral spine. Tm, position of metatarsal trichobothrium.

The following abbreviations are used in the text and figures: Somatic morphology: AER, anterior eye row; ALE, anterior lateral eye; AME, anterior median eye; AME-ALE, distance between AME and ALE; AME-AME, distance between AMEs; MOA, median eye area; PER, posterior eye row; PLE, posterior lateral eye; PME, posterior median eye; PME-PLE, distance between PME and PLE; PME-PME, distance between PMEs. Male palp: ARP, anterior part of

radix; ATA, anterior terminal apophysis; E, embolus; LE, lamellar extension; MTA, median terminal apophysis; PCA, proximal cymbium apophysis; PC, paracymbium; PL, pseudolamella; PTA, Posterior part of terminal apophysis; SPT, supratégulum; Te, tegulum. Epigyne: BS, basal part of scape; DPS, distal part of scape; EM, embolus membrane; LL, lateral lobes; PMP, posterior median plate; TA, terminal apophysis.

Genus *Bifurcia* Saaristo, Tu & Li, 2006

Bifurcia Saaristo, Tu & Li, 2006: 385.

Type species. *Arcuphantes ramosus* Li & Zhu, in Li, Sha & Zhu, 1987.

Diagnosis. The genus *Bifurcia* can be easily diagnosed in the male by the apical part of the paracymbium divided into two branches, by the thick and stout tipped pseudolamella with a lamellar extension arising from base. In the female the genus is diagnosed by the basal part of scape furnished with long hairs but the distal part hairless, and scape turnover dorsally forming more or less full circle.

Distribution. China (Hebei, Hubei, Henan, Hunan, Sichuan).

Bifurcia cucurbita sp. nov.

(Figs. 1–7)

Type specimens. Holotype: male, Longyuwan (al. 105 m, 33°42'N, 111°45'E), Luanchuan County, Luoyang City, Henan Province, China, 21 Jul. 2004. Paratypes: 1 female, same data as holotype; 1 female, Baligou (34°7'N, 114°5'E), Hui County, Henan Province, China, 11 Jul. 2004. 1 female, Mt. Baiyun (34°1'N, 112°1'E), Song County, Henan Province, China, 24 Jul. 2004. all coll. by Ming-Sheng Zhu.

Etymology. The specific name is from Latin cucurbita, and refers to the shape of the tegulum resembles cucurbit.

Diagnosis. The new species resembles *Bifurcia ramosa* (Li & Zhu, 1987) in the shape of male palp and female epigyne. The male can be distinguished by the shape of the falciform posterior part of terminal apophysis (Figs. 3–4), the peaked distal part of the tegulum (Figs. 2–3) and by the

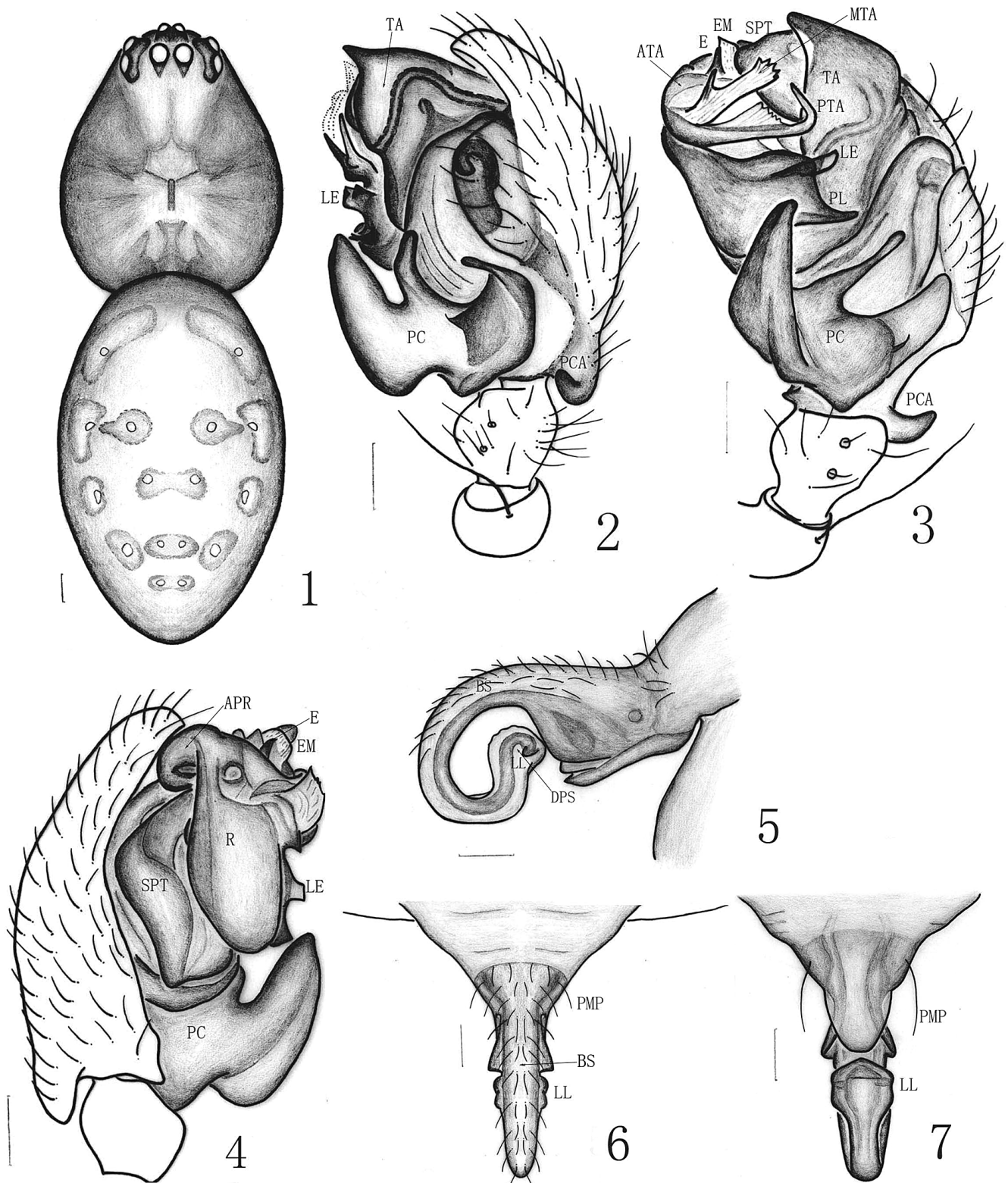


Fig. 1–7. *Bifurcia cucurbita* sp. nov. 1. Female; 2. left male palp, retrolateral view; 3. left male palp, ventral view; 4. left male palp, prolateral view; 5. epigyne, lateral view; 6. epigyne, ventral view; 7. epigyne, dorsal view.

tooth in the middle of the paracymbium (Figs. 2–3). The female can be identified by the broad basal part of the scape and the radius of the scape curve (Figs. 5–7).

Description of male. Holotype total length 2.60. Carapace 1.22 long, 1.02 wide; abdomen 1.38 long, 0.82 wide. Carapace grayish-brown, fovea distinct. Eyes with

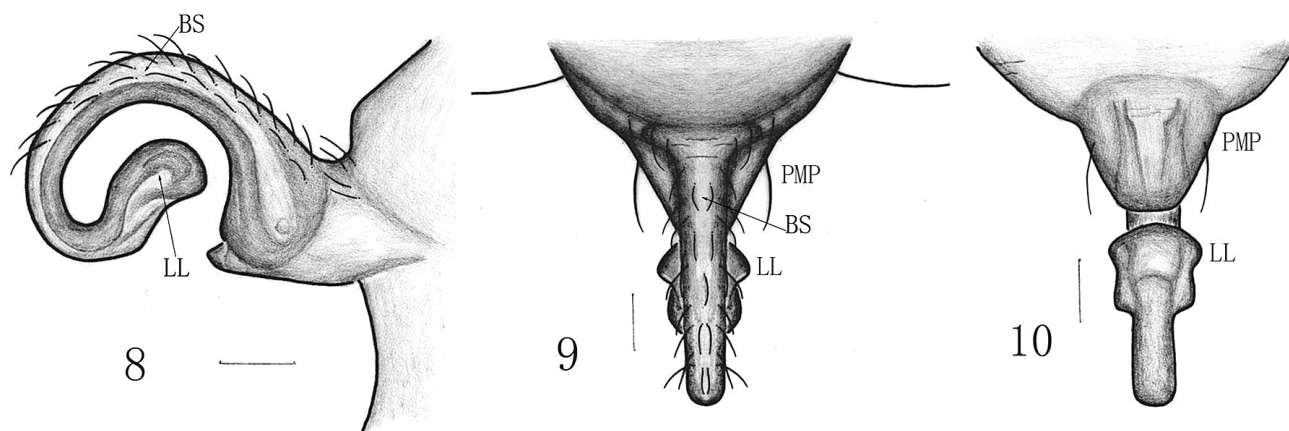


Fig. 8–10. *Bifurcia songi* sp. nov. 8. Epigyne, lateral view; 9. epigyne, ventral view; 10. epigyne, dorsal view.

black surround; AMEs smallest (0.05), others subequal; AER and PER procurved, AME-AME (0.03) shorter than AME-ALE (0.08), PME-PME (0.05) equal to PME-PLE (0.05), MOA front shorter than back (0.15:0.23). ALE and PLE juxtaposed. Clypeus height 0.17. Endite parallel, longer than wide (0.25:0.18). Labium yellowish. Chelicerae brown, with stridulatory ridges, fang groove with three big promarginal and four small retromarginal teeth. Sternum cordiform, slightly darker than carapace. Legs light yellow, long and slender with black stripe. Chaetotaxy of the tibia: I 2-1-1-1, II 2-0-1-1, III 2-0-0-0, IV absent. TmI 0.15. Measurements of legs: I 7.97 (1.95 + 2.88 + 1.98 + 1.16), II 6.25 (1.70 + 1.90 + 1.65 + 1.00), III 5.21 (1.90 + 1.45 + 1.18 + 0.68). Abdomen brown, dorsal with black and white spots, these spots composed of two longitudinal arched strips. Spinneret black.

Male palp (Figs. 2–4). Patella with long dorsal bristle. Tibia unmodified with two trichobothria. Cymbium with hook-shaped PCA pointing retrolaterally. Paracymbium L-shape, a spiny tooth in the middle, apical part divided into two branches. Tegulum looks like a cucurbit, distal part peaked. Suprattegulum blunt, strongly sclerotised. Radix strongly curved, ARP hook-like; PL broad, with a basal ribbon-like LE with membranous apex. Terminal apophysis divided into three part: ATA short, bolt-like; MTA membranous, margin serrated; PTA falciform; E short and blunt.

Description of female. A paratype (same data as holotype) total length 2.50. Carapace 1.07 long, 1.02 wide, abdomen 1.43 long, 0.87 wide. Clypeus height 0.20. Chaetotaxy of the tibia: I, II 2-1-1-1; III, IV 2-0-0-0. TmI 0.16. Measurements of legs: I 6.87 (1.88 + 2.24 + 1.70 + 1.05), II 5.99 (1.68 + 1.93 + 1.50 + 0.88), III 4.48 (1.43 + 1.40 + 1.05 + 0.60), IV, 5.59 (1.78 + 1.83 + 1.73 + 0.25). Tm IV absent. Leg formula: 1243.

Epigyne (Figs. 5–7). BS cover with long hairs sparsely; genuine scape hairless. Scape turnover dorsally, forming more or less full circle. LL well-developed, and compact with DPS. Without stretcher.

Distribution. China (Henan).

Bifurcia songi sp. nov.

(Figs. 8–10)

Type specimens. Holotype: female, Baotianman (al. 1382 m, 33°31'N, 112°55'E), Neixiang County, Nanyang City, Henan Province, China, 24 Jul. 2004. coll. by Ming-Sheng Zhu. Paratypes: 1 female, same locality, 14 Aug. 2006. coll. by Hui Zhai; 1 female, same locality, 11 Jul. 2006. coll. by Bao-Shi Zhang; 2 females, Mt. Tianchi (al. 1058 m, 34°15'N, 111°50'E), Song County, Henan Province, China, 12 Jul. 2004. coll. by Ming-Sheng Zhu.

Etymology. The specific name is dedicated to Da-Xiang Song, an excellent arachnologist and Academician of the Chinese Academy of Sciences.

Diagnosis. This species is very similar to *B. cucurbita* sp. nov., especially in the spots of the abdomen and the shape of the scape, but the length of the scape is longer than that of the latter species, and the basal part of the scape is relatively narrow in ventral view. The spination and the number of the margin teeth are also different.

Description of female. Holotype total length 2.76. Carapace 1.12 long, 0.89 wide, abdomen 1.68 long, 1.06 wide. Chelicerae with three big promarginal and five or six small retromarginal teeth. Chaetotaxy of the tibia: I 2-1-1-2; II 2-1-1-1; III, IV 2-0-0-0. TmI 0.16. Measurements of legs: I 6.47 (1.82 + 2.01 + 1.68 + 0.96), II 5.84 (1.58 + 1.88 + 1.45 + 0.83), III 4.44 (1.29 + 1.39 + 1.09 + 0.67), IV 4.72 (1.68 + 1.82 + 1.39 + 0.83). Tm IV absent. Leg formula: 1243.

Epigyne as shown in Figs. 8–10.

Male unknown.

Distribution. China (Henan).

Remarks. In morphology, the structure of female scape of two new species are close to those of *B. ramosa*. At the same time, the camber of the scape are quite different from *B. curvata*. In geography, two new species and *B. ramosa* are all distributed in Henan Province, while *B. curvata* was not yet found in that province. However, more deep research is necessary to make clear about their phylogenetic

relationship in the genus *Bifurcia*.

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Received May 30, 2007 / Accepted September 6, 2007